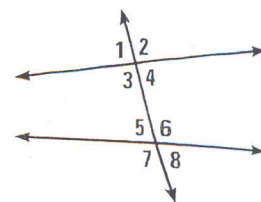


Chapter 3

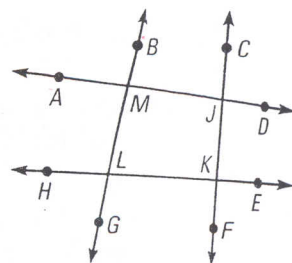
3.1 Classify the angle pair as *corresponding*, *alternate interior*, *alternate exterior*, or *consecutive interior* angles.

1. $\angle 6$ and $\angle 2$ *corresponding* 2. $\angle 7$ and $\angle 2$ *alt. exterior*
 3. $\angle 5$ and $\angle 3$ *consecutive int.* 4. $\angle 4$ and $\angle 5$ *alt. interior*
 5. $\angle 1$ and $\angle 5$ *corresponding* 6. $\angle 3$ and $\angle 6$ *alt. interior*



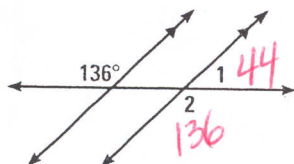
3.1 Copy and complete the statement. List all possible correct answers.

7. $\angle AMB$ and \angle ? are corresponding angles. *$\angle HLM$ & $\angle MJC$*
 8. $\angle AML$ and \angle ? are alternate interior angles. *$\angle MLK$*
 9. $\angle CJD$ and \angle ? are alternate exterior angles. *$\angle FKL$ & $\angle AML$*
 10. $\angle LMJ$ and \angle ? are consecutive interior angles. *$\angle MLK$ & $\angle MJK$*
 11. ? is a transversal of \overleftrightarrow{AD} and \overleftrightarrow{HE} . *\overleftrightarrow{BG} and \overleftrightarrow{CF}*

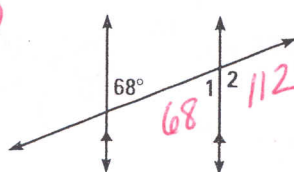


3.2 Find $m\angle 1$ and $m\angle 2$. Explain your reasoning.

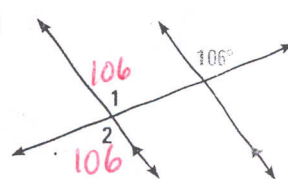
12.



13.

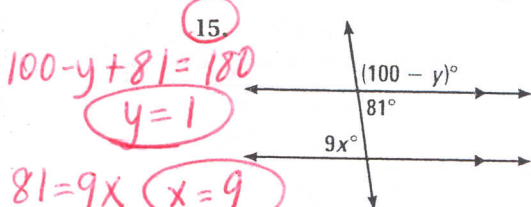


14.

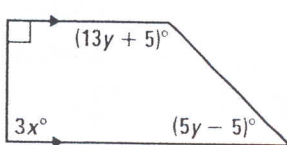


3.2 Find the values of x and y .

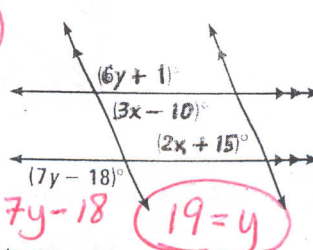
15.



16.

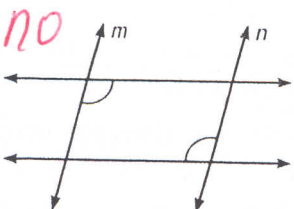


17.

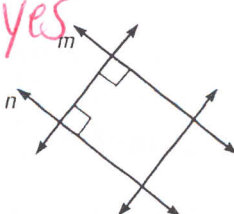


3.3 Is there enough information to prove $m \parallel n$? If so, state the postulate or theorem you would use.

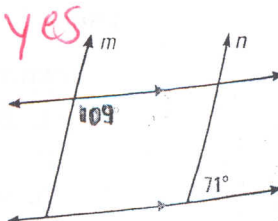
18.



19.

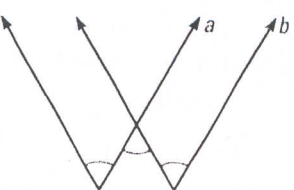


20.

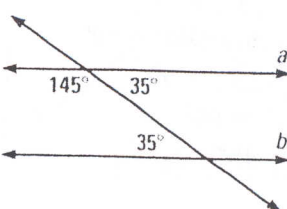


3.3 Can you prove that lines a and b are parallel? If so, explain how.

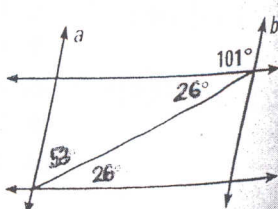
21.



22.



23.



3.4 Tell whether the lines through the given points are *parallel*, *perpendicular*, or *neither*. Justify your answer.

24. Line 1: (7, 4), (10, 5)
Line 2: (2, 3), (8, 5)

parallel

25. Line 1: (-3, 1), (-2, 5)
Line 2: (-1, -3), (5, -2)

neither

26. Line 1: (-6, 0), (8, 7)
Line 2: (1, 4), (2, 2)

perpendicular

3.4 Tell which line through the given points is steeper.

27. Line 1: (0, -6), (-4, -9)
Line 2: (-2, 5), (1, 9)

28. Line 1: (-1, -5), (-1, 3)
Line 2: (-3, 4), (-5, 4)

29. Line 1: (1, 1), (2, 6)
Line 2: (1, 1), (3, 10)

3.5 Write an equation of the line that passes through the given point P and has the given slope m .

30. $P(4, 7)$, $m = 2$

$y = 2x - 1$

31. $P(-3, 0)$, $m = \frac{2}{3}$

$y = \frac{2}{3}x + 2$

32. $P(9, 4)$, $m = -\frac{1}{3}$

$y = -\frac{1}{3}x + 7$

3.5 Write an equation of the line that passes through point P and is parallel to the line with the given equation.

33. $P(1, -2)$, $y = -2x - 6$

$y = -2x$

34. $P(6, 3)$, $y = -\frac{1}{3}x + 12$

$y = -\frac{1}{3}x + 5$

35. $P(-7, 3)$, $y = x + 3$

$y = x + 10$

36. $P(0, 3)$, $y = 4x - 2$

$y = 4x + 3$

37. $P(-9, 4)$, $y = \frac{2}{5}x + 1$

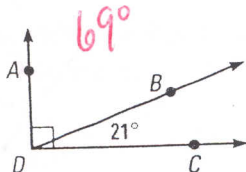
$y = \frac{2}{5}x + \frac{38}{5}$

38. $P(8, -3)$, $y = x - 5$

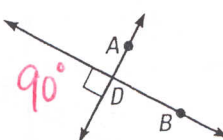
$y = x - 11$

3.6 Find $m\angle ADB$.

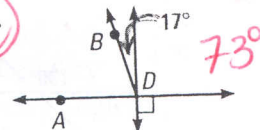
39.



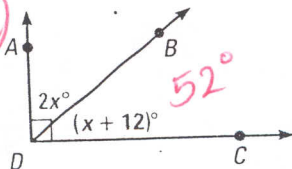
40.



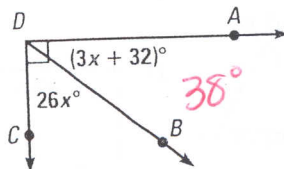
41.



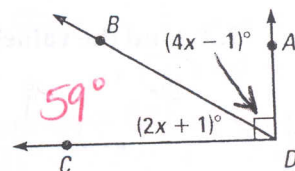
42.



43.



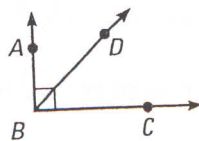
44.



3.6 45. Copy and complete the proof.

GIVEN $\vec{BA} \perp \vec{BC}$,
 \vec{BD} bisects $\angle ABC$.

PROVE $m\angle ABD = 45^\circ$



STATEMENTS

REASONS

1. $\vec{BA} \perp \vec{BC}$

2. $\angle ABC$ is a right \angle

3. $m\angle ABC = 90^\circ$

4. \vec{BD} bisects $\angle ABC$

5. $m\angle ABD = m\angle DBC$

6. $m\angle ABC = \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$

7. $m\angle ABD + m\angle DBC = 90^\circ$

8. $m\angle ABD + \underline{\hspace{1cm}} = 90^\circ$

9. $2(m\angle ABD) = 90^\circ$

10. $m\angle ABD = 45^\circ$

1. $\angle ABC$ is a right \angle *Given*

2. Definition of perpendicular lines

3. $\angle ABC$ is a right \angle *def. of right \angle*

4. Given

5. $m\angle ABD = m\angle DBC$ *def. of \angle bisector*

6. Angle Addition Postulate

7. $m\angle ABD + m\angle DBC = 90^\circ$ *Substitution*

8. Substitution Property of Equality

9. $2(m\angle ABD) = 90^\circ$ *Simplify*

10. $m\angle ABD = 45^\circ$ *Division Prop. of =*

$m\angle ABD$

$+$

$m\angle DBC$

$= 90^\circ$

$m\angle ABD$

$= 45^\circ$